United States Department of Agriculture **Forest Service** **Intermountain Region Forest Health Protection** **4746 South 1900 East Ogden, UT 84403 FAX: 801-479-1477**

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To: Chief

Enclosed are the narrative responses followed by the FHPIS tables for the 2005 insect and disease conditions in Region 4.

In 2005, western spruce budworm-caused defoliation increased to 103,600 defoliated acres in Idaho, primarily on the Boise and Payette National Forests. Mortality causing insect activity decreased in 2005. Most of the mortality was the result of lingering drought conditions and high bark beetle population levels. Across the Region, mountain pine beetle killed approximately 2.5 million trees over 615,700 acres. Douglas-fir beetle caused mortality across 140,800 acres; and, subalpine fir mortality affected 161,300 acres regionally.

The digital data was sent under separate cover. If you have any questions, please call Kathleen Matthews at 208-373-4239 (e-mail kmatthews03@fs.fed.us) or Dayle Bennett at 208-373-4227 (e-mail ddbennett@fs.fed.us).

/s/ Dayle D. Bennett (for)
PAUL RIES
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Enclosure

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KMatthews:al

Insects: Native

Douglas-fir beetle
Dendroctonus pseudotsugae

Region 4: Idaho, Utah, and Wyoming
Host: Douglas-fir

Douglas-fir beetle-caused tree mortality decreased slightly across Region 4. In 2005, 140,800 acres were affected as compared to 178,100 acres in 2004. Most of the mortality for 2005 occurred in Utah on the Ashley National Forest (33,100 acres) and in Wyoming on the Bridger-Teton National Forest (19,100 acres). High levels of Douglas-fir mortality occurred on private land across the region (22,000 acres). Douglas-fir mortality on the Bureau of Land Management lands in Idaho and Utah increased slightly from 10,200 acres in 2004 to 11,100 acres in 2005. Mortality on the Salmon-Challis National Forest decreased dramatically from 58,400 acres in 2004 to 12,300 acres.

Douglas-fir tussock moth
Orgyia pseudotsugata

Region 4: Idaho, Nevada and Utah
Hosts: Douglas-fir, true firs

Defoliation of Douglas-fir and subalpine fir attributed to Douglas-fir tussock moth decreased in 2005. All Douglas-fir tussock moth defoliation occurred in Nevada or Idaho, over 10,500 acres. Most of the defoliation occurred on the Humboldt-Toiyabe National Forest (6,600 acres) in Nevada or on Bureau of Land Management lands (2,800 acres) in Idaho.

Fir engraver beetle
Scolytus ventralis

Region 4: California, Idaho, Nevada, and Utah
Hosts: grand fir, red fir, subalpine fir, white fir

Fir engraver beetle-caused tree mortality decreased significantly in 2005. Aerial surveyors recorded 65,800 acres with mortality in 2005 reduced from 199,300 acres reported in 2004. Referencing the 2004 areas with heavy tree mortality, in Nevada, the Humboldt-Toiyabe National Forest decreased from 37,000 to 12,400 affected acres. Across the Utah National Forests, the Dixie reduced from 34,200 to 25,300 acres; the Uinta from 18,600 to 5,000 acres; and the Manti-La Sal from 13,400 to 1,000 acres affected. In Idaho, the Boise and Payette National Forests also reduced dramatically from 18,600 acres affected in 2004 to just over 400 acres. Private lands in Utah and Idaho also saw a reduction in true fir mortality from 25,400 to 5,800 acres.

Forest tent caterpillar
Malacosoma disstria

Region 4: California, Idaho, Nevada, Utah, and Wyoming
Hosts: aspen, cottonwood

In 2005, no forest tent caterpillar defoliation of trees was identified during aerial surveys. Forest tent caterpillar was noted sporadically on shrubs throughout the region.

Jeffrey pine beetle
Dendroctonus jeffreyi

Region 4: California, Nevada
Host: Jeffrey pine

Jeffrey pine beetle activity returned to normal levels after the 2004 high of 11,700 trees killed across 5,600 acres. In 2005, approximately 500 trees were killed over 200 acres. Most of the mortality, occurred on the Humboldt-Toiyabe National Forest with the highest amount of mortality occurring on the Carson Ranger District where nearly 300 trees were killed over 100 acres.

Mountain pine beetle
Dendroctonus ponderosae

Region 4: California, Idaho, Nevada, Utah, and Wyoming
Hosts: bristlecone, limber, lodgepole, Jeffrey, ponderosa, western white, and whitebark pines

Mountain pine beetle-caused tree mortality decreased from 3.5 million trees killed over 691,500 acres in 2004 to 2.4 million trees killed over 615,700 acres in 2005. Most of the mortality occurred in three distinct areas. In central Idaho on the Salmon-Challis National Forest and Sawtooth National Recreation Area, a total of 863,700 lodgepole and whitebark pine trees were killed over 246,000 acres in 2005, compared to 1.2 million trees killed over 289,000 acres in 2004. Mortality in this area began in 1998 and is currently the largest mountain pine beetle outbreak in the Region. The second outbreak area is located in western Wyoming on the Bridger-Teton National Forest. Tree mortality decreased from approximately 982,700 trees across 212,000 acres in 2004 to 818,300 lodgepole and whitebark pine trees killed over 201,100 acres in 2005. The third outbreak area is in northern Utah on the Wasatch-Cache and Ashley National Forests. This outbreak, in its third consecutive year, decreased from 1.2 million trees killed over 136,700 acres in 2004 to 504,000 lodgepole pine trees killed over 101,200 acres in 2005.

Pine engraver beetle
Ips pini

Region 4: Idaho and Utah
Hosts: lodgepole and ponderosa pine

Beetles killed less than 100 trees on State, Bureau of Land Management and National Forest lands in Idaho. Mortality due to pine engraver beetle remained at endemic levels throughout the Region.

Spruce beetle
Dendroctonus rufipennis

Region 4: Idaho, Utah, and Wyoming
Host: spruce

In 2005, spruce beetle-caused tree mortality lessened to 83,200 trees killed over 35,400 acres down from 2004's reported numbers of 124,400 trees killed over 38,300 acres. The majority of the mortality occurred in Utah on the Escalante Ranger District (56,900 trees over 14,800 acres) of the Dixie National Forest. Most of the Utah National Forests experienced 2,000 or more acres with spruce beetle-caused mortality.

Western pine beetle
Dendroctonus brevicomis

Region 4: Idaho
Host: ponderosa pine

In 2005, the number of ponderosa pine trees killed by western pine beetle was at endemic levels. Most of the mortality occurred on Idaho National Forests and private lands in Idaho. Across the region in 2005 approximately 1,500 trees were killed over 600 acres. Tree mortality was reduced from 2004 levels, 6,400 trees killed over 7,200 acres.

Western spruce budworm
Choristoneura occidentalis

Region 4: Idaho, Utah, and Wyoming
Hosts: Douglas-fir and true firs

Western spruce budworm-caused tree defoliation increased in 2005. In 2005, 103,600 acres were defoliated compared to 33,100 acres in 2004. Most of the defoliation occurred on the Boise National Forest (54,900 acres) although budworm-caused defoliation was reported on all National Forests in south-central Idaho. In Utah, the Dixie National Forest had high levels of

budworm defoliation with 37,200 acres affected. Private land in Utah had 3,100 acres with defoliation.

Pinyon ips
Ips confusus

Region 4: California, Nevada, and Utah
Host: Pinyon pine

In 2005, approximately 83,400 trees were recently killed over 30,500 acres, a significant reduction from 2004's reported mortality of 5.8 million trees killed over 938,900 acres. Nearly all of the tree mortality occurred in Nevada (50,900 trees over 16,500 acres) or Utah (32,000 trees over 13,800 acres). In Nevada, most of the mortality occurred on private and Bureau of Land Management (BLM) lands. In Utah, most of the mortality occurred on the Manti-La Sal, Fishlake, and Dixie National Forests (21,600 trees over 9,900 acres) with the remainder observed on BLM and private lands. Historically, pinyon-juniper forests have not been aerially surveyed. However, the dramatic increase in pinyon mortality in 2001 and 2002 as a result of the extended drought and increased pinyon ips populations necessitated documenting this widespread mortality.

Insects: Nonnative

European gypsy moth
Lymantria dispar

Region 4: Idaho, Nevada, and Utah
Hosts: various deciduous species

The gypsy moth was first detected in Utah in 1988. Since then, male moths have been captured in various locations nearly every year. In 2005, one male gypsy moth was captured in Utah. The Utah adult male was captured in Pine Brook, a residential area in Summit County. The moth was caught in the delimiting grid established in 2005. A delimitation-trapping grid will be installed again in 2006 at the Summit County site. In Wyoming, two separate single male moth captures occurred in Yellowstone National Park. APHIS and the National Park Service will delimit trap both sites in 2006.

Balsam Woolly Adelgid
Adelges piceae Ratzeburg

Region 4: Idaho
Hosts: subalpine and grand firs

This introduced aphid attacks trees of all size classes and is easily identified by the presence of masses of white "woolly" females on the stem bark and branches. Tree mortality can occur

within 2-3 years after the initial infestation. In Idaho, north of the Salmon River, the insect is a common forest pest causing substantial mortality in subalpine fir stands. South of the Salmon River, in Region 4, balsam woolly adelgid infested grand fir and subalpine fir on the Payette National Forest near Burgdorph, ID and private property as far south as Cascade, ID. This is the first report of this insect on National Forest lands south of the Salmon River. Likely, this insect has spread to other nearby areas of the National Forest that are not easily accessible.

Diseases: Native

Annosum root disease
Heterobasidion annosum

Region 4: California, Idaho, Nevada, Utah, and Wyoming
Hosts: bitterbrush, chokecherry, Douglas-fir, true firs, spruce and Jeffrey, lodgepole, and ponderosa pines

This disease can be found throughout the Region, but mostly as a saprophyte on dead trees, stumps, roots, and cull logs or fallen stems. The fungus occasionally kills young ponderosa pine especially in plantations on droughty soils.

Armillaria root disease
Armillaria spp.

Region 4: Idaho, Nevada, Utah, and Wyoming
Hosts: Douglas-fir, grand fir, pines, spruce, and subalpine fir

Evidence of Armillaria root disease can be found throughout the Region but the fungus functions primarily as a weak pathogen or saprophyte causing little direct mortality. In southern Utah, it may act as a primary pathogen, killing mature and immature ponderosa pine and mature fir and spruce on cool sites at high elevation.

Black stain root disease
Ophiostoma wageneri

Region 4: Idaho, Nevada, and Utah
Host: pinyon pine

Aerial detection and follow-up ground surveys have discovered about two dozen root disease centers in pinyon pine stands in the Intermountain Region. Perennial infections caused mortality of individual pinyon pine over 50 acres of the Bureau of Land Management Burley District in southern Idaho. In Utah and Nevada, the host is more prevalent. The infected acreage totals 1,150 acres on the Humboldt-Toiyabe National Forest in Nevada and 1,350 acres on the Dixie

and Manti-LaSal National Forest in Utah. In many cases, the areas with black stain have now been infested with pinyon ips.

Dwarf mistletoes
Arceuthobium spp.

Region 4: Idaho, Nevada, Utah, and Wyoming
Hosts: Douglas-fir, pines, true firs, spruce, and western larch

These plant parasites remain the most widespread and frequently observed disease within the Intermountain Region. Regional incidence by major host species is estimated as follows: lodgepole pine 50 percent, ponderosa pine 20 percent, and Douglas-fir 20 percent. These percentages by host type represent stands having some level of infection.

Diseases: Nonnative

Whitepine blister rust
Cronartium ribicola

Region 4: California, Idaho, Nevada, and Wyoming
Hosts: limber, whitebark, bristlecone, western white and sugar pines

This introduced disease is common throughout its hosts range in southern Idaho and western Wyoming. It is present in the western portion of the Intermountain Region in California and Nevada near the Lake Tahoe area. No infection has been found or reported in Utah; but the disease has been identified very close to the Utah border in southern Idaho and to the west in the Jarbidge Mountains of northeastern Nevada. The new observations of whitepine blister rust in eastern Nevada are cause for concern because they are close to highly sensitive bristlecone pine populations in Great Basin National Park and elsewhere. Overall, five-needled pine trees are of low occurrence and frequency in the Intermountain Region. Often relegated to high alpine areas, these pines grow slowly but provide important ecosystem functions such as providing shade and stabilization of snow retention for watershed integrity, recreation, aesthetics, and wildlife habitat and usage.

Declines and Complexes

Subalpine fir mortality complex

Region 4: Idaho, Nevada, Wyoming, and Utah
Host: subalpine fir

Decline and die-off of subalpine fir started in the late 1980's in the Intermountain Region with peak mortality period occurring during mid-1990 when over a million trees were affected by this complex. Although there are a number of pathogens involved in this complex, the primary insect causing subalpine fir mortality is the western balsam bark beetle; *Dryocoetes confusus.* Drought compounded by overstocked and overmature stand conditions also contribute to subalpine fir mortality. In 2005, approximately 284,200 subalpine fir trees died over 161,300 acres across the region. This is a substantial decrease from the 2004 regionally reported numbers of 840,500 trees over 308,200 acres. The Bridger-Teton National Forest in Wyoming accounted for the majority of subalpine fir mortality for the second consecutive year with 90,200 trees killed over 47,900 acres. The Humboldt-Toiyabe National Forest in Nevada lost 19,500 trees over 13,500 acres. The Dixie National Forest in Utah lost 31,100 trees over 14,000 acres.

FOREST PEST INFORMATION SYSTEM (FPIS

Region: 4 Date: 1/11/2006 Name of Preparer: Kathleen Matthews

Pest	State	Landowner-ship Class	Acres Infested (thousands) (1 decimal)	Volume Killed (MCF) (1 decimal)	Number of Trees Killed (thousands)	Number of SPB Spots
DFB	ID	1	39.3	2,375.1	79.1	
		2	0.5	31.9	1.1	
		3	0.9	57.6	1.9	
	UT	1	44.8	2,251.7	75.1	
		2	9.6	622.4	20.7	
		3	24.5	1,904.1	63.5	
	WY	1	19.1	1,529.5	51.0	
		2	1.6	143.2	4.8	
		3	0.5	67.8	2.3	
DFTM	ID	1	0.4			
		2	2.8			
		3	0.6			
	NV	1	6.6			
		2	0			
		3	.1			
FEB	CA	1	2.2	93.6	3.1	
		2	0.0	0.2	0.0	
		3	0.8	19.9	0.7	
	ID	1	0.4	27.3	0.9	
		2	0.0	0.3	0.0	
		3	0.5	26.6	0.9	
	NV	1	12.4	452.8	15.1	
		2	8.9	449.7	15.0	
		3	.9	28.0	.9	
	UT	1	32.7	1,591.1	53.0	
		2	1.3	193.5	6.5	
		3	5.7	189.9	6.3	

Pest	State	Landowner-ship Class	Acres Infested (thousands) (1 decimal)	Volume Killed (MCF) (1 decimal)	Number of Trees Killed (thousands)	Number of SPB Spots
MPB	ID	1	276.3	15,205.8	950.4	
		2	3.9	181.5	11.3	
		3	2.5	108.9	6.8	
	NV	1	2.4	69.5	4.2	
		2	0.3	6.8	0.5	
		3	0.0	1.6	0.1	
	UT	1	103.9	10,415.3	520.8	
		2	0.2	7.2	0.4	
		3	12.1	1,595.2	79.8	
	WY	1	201.1	13,092.8	818.3	
		2	5.0	294.2	18.4	
		3	8.0	373.7	23.4	
PIPS*	CA	1	0.1	0.0	0.2	
		2	0.1	0.0	0.1	
		3	0.0	0.0	0.0	
	NV	1	0.4	0.1	0.9	
		2	7.4	3.1	24.5	
		3	8.7	3.2	25.4	
	UT	1	9.9	2.7	21.7	
		2	2.3	0.7	6.0	
		3	1.6	0.5	4.3	
SB	UT	1	33.5	7,131.1	79.2	
		2	0	0	0	
		3	1.6	160.0	1.8	
	WY	1	0.3	198.5	2.2	
		2	0	0	0	
		3	0	0	0	
WPB	ID	1	0.4	18.1	0.9	
		2	0.0	2.2	0.1	
		3	0.2	8.9	0.4	

* *Ips confusus* Pinyon ips

Pest	State	Landowner-ship Class	Acres Infested (thousands) (1 decimal)	Volume Killed (MCF) (1 decimal)	Number of Trees Killed (thousands)	Number of SPB Spots
WSB	ID	1	59.2			
		2	0.7			
		3	3.3			
	UT	1	37.3			
		2	0			
		3	3.2			
SAF	ID	1	30.1	1,414.6	70.7	
		2	1.8	35.5	1.8	
		3	16.2	114.0	5.7	
	NV	1	13.5	389.2	19.5	
		2	0	0	0	
		3	0.3	8.0	0.4	
	UT	1	45.6	1,738.7	86.9	
		2	0.2	7.0	0.3	
		3	4.7	142.0	7.1	
	WY	1	47.9	1,804.3	90.2	
		2	0.6	16.1	0.8	
		3	0.4	16.0	0.8	